

**PHASE II SAMPLING AND ANALYSIS PLAN
1.5-ACRES OF 436 EAST CHICAGO STREET
COLDWATER, MICHIGAN 49036**

for

**BRANCH COUNTY
31 DIVISION STREET
COLDWATER, MICHIGAN 49036**

**AKT PEERLESS No. 7169S
AUGUST 8, 2011**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 INTRODUCTION.....	1
2.0 PHASE II ESA - SCOPE OF WORK.....	2
3.0 LABORATORY ANALYSIS.....	5
4.0 SCHEDULE.....	6

FIGURES

FIGURE 1.....	TOPOGRAPHIC LOCATION MAP
FIGURE 2.....	PROPOSED GEOPHYSICAL SURVEY AREA MAP
FIGURE 3.....	PROPOSED SAMPLE LOCATION MAP

APPENDIX

APPENDIX A.....	SITE-SPECIFIC HEALTH AND SAFETY PLAN
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**PHASE II SAMPLING AND ANALYSIS PLAN
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1.0 INTRODUCTION

AKT Peerless Environmental & Energy Services (AKT Peerless) has prepared this Phase II Sampling and Analysis Plan (SAP) on behalf of Branch County. This SAP was completed under Branch County's 2007 United States Environmental Protection Agency (USEPA) brownfield assessment grant for petroleum substance sites. Given the findings of the Phase I Environmental Site Assessment (ESA) report for this property, AKT Peerless believes that petroleum substance constituents are the primary source of potential contaminants. The purpose of this SAP is to document and report proposed sample activities and rationale, data quality objectives, data generation methodologies and quality assurance measures associated with the proposed Phase II ESA.

On July 13, 2011 Branch County sent an eligibility determination letter to the Michigan Department of Environmental Quality (MDEQ) Brownfield Redevelopment Coordinator to allow for an assessment of the subject property under the petroleum substance grant. The MDEQ Brownfield Redevelopment Coordinator confirmed eligibility on July 14, 2011.

On August 3, 2011, AKT Peerless prepared a Phase I Environmental Site Assessment (ESA) on behalf of Branch County and M2 Enterprises Coldwater, LLC for the property identified as 1.5-Acres of 436 East Chicago Street, Coldwater, Michigan (herein referred to as the "subject property"). Refer to Figure 1, Topographic Location Map.

AKT Peerless' Phase I ESA included but was not limited to (1) a review of government database information, (2) review of historical maps including: topographic maps and aerial photographs, (3) a review of property records, and (4) interviews with property owners, knowledgeable persons, and government officials. As a result of the information reviewed, AKT Peerless identified the following recognized environmental conditions (RECs) in connection with the subject property:

1. The subject property operated as a truck stop filling station from at least 1937 through 1977, pumping 70,000-gallons of petroleum per month. AKT Peerless was unable to determine specific information regarding historical USTs and dispenser islands during the Phase I ESA, including the number of USTs or the contents. Building department records identify two 6,000-gallon diesel USTs installed in 1974 to the west of the truck wash, and Fire Department information identifies all USTs were removed in 1977. No soil or groundwater sampling information was identified in reference to the UST removal.
2. A violation was issued to the subject property in 1972 for leaking pumps on the dispensers. The potential exists for petroleum products to have impacted soil and groundwater from a release.
3. The subject property operated as a truck repair and car wash from 1937 through 1965 when

the garage was destroyed in a fire. AKT Peerless was unable to determine specific information regarding the former repair operations, including if any in-ground hoists, oil/water separators, used oil USTs, ASTs, or floor drains were present in the building. However, a building permit references a service pit at the subject property.

4. The subject property historically utilized fuel oil for heating purposes in the repair garage area. Building permits indicate one 3,000-gallon fuel oil UST may have been installed at the subject property in 1961. In addition, the subject property received violations from the fire department for improper equipment for their oil burning furnace (i.e. supplying oil to the furnace from an open container on the floor).
5. The subject property formerly burned trash on-site. AKT Peerless was unable to determine what materials were burned on-site or where burning occurred. In addition, information indicates the subject property was cited several times for having trash both inside and outside the building.
6. AKT Peerless observed concrete, metal, rubber, wood, and slag debris on the subject property during the site reconnaissance. This material may be related to fill material imported onto the subject property after demolition of the former building.
7. The eastern adjoining property formerly operated as a gasoline filling station and car wash from 1967 through 1979. Subsurface investigations have identified petroleum contamination in soil in close proximity to the western property boundary with the subject property. In addition, a Notice of Migration of Contamination was filed for this property in 1999.
8. The western adjoining property was occupied by C & H Power Mower Service in at least 1968. At that time the building was situated along the eastern side of the property. The potential exists for this business to have utilized hazardous materials and petroleum products in their repair business.

The purpose of AKT Peerless' Phase II ESA is to evaluate the RECs as identified in connection with the past use of the subject property.

2.0 PHASE II ESA - SCOPE OF WORK

The scope of work for the Phase II ESA will evaluate soil and groundwater at the subject property to determine current soil and groundwater contamination concentrations at the subject property, and determine if current contaminant concentrations exceed MDEQ Generic Residential Cleanup Criteria (GCC) and Screening Levels developed under the authority of Part 201 of the Natural Resources and Environmental Protection Act (NREPA), 1994 P.A. 451, as amended. If target chemical analytes are detected at concentrations exceeding the current

MDEQ Residential GCC, the subject property would be deemed a "*facility*"¹ as the term is defined in Part 201 of the NREPA.

The following scope of work has been established to evaluate the RECs identified in connection with the subject property:

- Perform a geophysical survey to determine the location of historical UST excavations, and whether any USTs are located at the subject property.
- Advance up to six soil borings to a maximum depth of 16.0 feet below ground surface (bgs) at the subject property, and install up to three temporary monitoring wells to evaluate REC 1, REC 2, REC 3, REC 4, and REC 8. Soil boring locations will be determined from the results of the geophysical survey.
- Advance up to five soil borings to a maximum depth of 8.0 feet bgs to evaluate REC 5 and REC 6.
- Advance two soil borings to a maximum depth of 16.0 feet bgs and install two temporary monitoring wells at the subject property to evaluate REC 7.
- Advance two soil borings and install three soil vapor points to evaluate the proposed building location.
- Collect up to thirteen soil, five groundwater, and three soil vapor samples.
- Submit the soil, groundwater, and soil vapor samples to a fixed-base, independent laboratory for chemical analysis of volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PNAs), base neutral acids (BNAs), polychlorinated biphenyls (PCBs), "Michigan 10" Metals (arsenic, barium, cadmium, chromium, copper, lead, mercury, selenium, silver, and zinc), cadmium, total chromium, lead, and ethylene glycol, as appropriate.
- Collect 7 quality assurance/quality control samples (QA/QC), for chemical analysis of VOCs, BNAs, PCBs, "Michigan 10" Metals, and ethylene glycol, as appropriate.
- Prepare Phase II ESA or BEA report, as necessary.

¹ "Facility" means any area, place, or property where a hazardous substance in excess of the concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located. Facility does not include any area, place, or property where any of the following conditions are satisfied: (i) Response activities have been completed under this part that satisfy the cleanup criteria for unrestricted residential use. (ii) Corrective action has been completed under part 213 that satisfies the cleanup criteria for unrestricted residential use. (iii) Site-specific criteria that have been approved by the department for application at the area, place, or property are met or satisfied and both of the following conditions are met: (A) The site-specific criteria do not depend on any land use or resource use restriction to ensure protection of the public health, safety, or welfare or the environment. (B) Hazardous substances at the area, place, or property that are not addressed by site-specific criteria satisfy the cleanup criteria for unrestricted residential use.

TABLE 1- SAMPLING AND ANALYSIS SUMMARY

Recognized Environmental Conditions	Number and Depth of Borings	Number of Samples and Matrix	Analytical Parameters
# 1 – Former Truck Stop Gas Station #2 – Leaking Gasoline Pumps #3 – Former Truck Stop Repair #4 – Historical fuel oil use #8 – Western adjoining property	6, 16.0 feet	6 Soil 3 Water	VOCs, PNAs, lead (PCBs, cadmium, chromium, lead, ethylene glycol in up to 3 borings)
#5 – Former Trash Burning #6 – Observed Slag, and other debris	5, 8.0 feet	5 Soil	VOCs, BNAs, “Michigan 10” Metals
#7 – Eastern adjoining property	2, 16.0 feet	2 Water	VOCs, PNAs, lead
Proposed building location	2, 16.0 feet 3, 5.0 feet	2 Soil 3 Soil Vapor	VOCs, PNAs, lead (soil only) VOCs (soil vapor only)

The proposed boring locations are depicted on Figure 3, Proposed Sample Location Map. Borings B-1 through B-6 will be based on the results of the geophysical survey to determine historical locations of USTs and building location.

Previous environmental reports regarding investigations at the northeastern adjoining property identified groundwater at approximately 11.0-feet bgs. Due to seasonal changes in groundwater levels, AKT Peerless anticipates that 16.0 feet bgs will be deep enough to encounter groundwater on the subject property. However, if groundwater is not encountered during AKT Peerless’ subsurface investigation a second soil sample may be collected.

The proposed scope of work outlined in Table 1 is based on the following rationale: (1) the nature of the concerns identified in the Phase I ESA, (2) the macro core soil sampler utilized by AKT Peerless being able to collect 4 foot long soil intervals, and (3) the macro core soil sampler utilized by AKT Peerless being able to encounter groundwater. AKT Peerless anticipates soil borings will be advanced to a maximum depth of 16.0 feet bgs, or until such time groundwater or a confining stratigraphic unit is encountered. However, actual boring depth may be altered based on field observations, field screening results, and/or soil lithologies encountered.

AKT Peerless will adhere to quality assurance objectives and procedures outlined in the Quality Assurance Project Plan (QAPP) approved by Region V of the USEPA under the 2007

Branch County Petroleum Substance and Hazardous Substance Brownfield Assessment Grant project. Onsite activities will be conducted in accordance with the Health and Safety Plan provided in Appendix A.

Soil borings will be completed in accordance with the “*Standard Guide for Direct Push Soil Sampling for Environmental Site Characterizations*,” ASTM Designation D-6282. Soil will be field screened continuously using an organic vapor meter/photo-ionization detector (OVM/PID). Soil samples for laboratory analysis will be collected from each soil boring based on field screening results, visual observations and/or significant changes in stratigraphy. The total depth of borings will be determined by field observations (i.e. OVM/PID reading, soil stratigraphy, encountering a confining layer or encountering groundwater).

3.0 LABORATORY ANALYSIS

Samples collected will be submitted under chain-of-custody to Merit Laboratories Inc. or Fibertec Environmental Services, Inc. for laboratory analysis. The following estimated sample volume and laboratory analysis for the Phase II ESA are anticipated:

TABLE 2: SUMMARY OF PROPOSED LABORATORY ANALYSIS

Sample Locations	Anticipated Laboratory Analytical Parameter(s)	Anticipated Matrix	Anticipated Number Of Samples*
B-1/TMW, B-2, B-3, B-4/TMW, B-5, B-6/TMW	VOCs, PNAs, lead (PCBs, cadmium, chromium, lead, ethylene glycol in up to 3 borings)	Soil	6
		Water	3
B-7 through B-11	VOCs, BNAs, “Michigan 10” Metals	Soil	5
B-12/TMW, B-13/TMW, B-14, B-15	VOCs, PNAs, lead	Soil	2
		Water	2
SV-1 through SV-3	VOCs	Soil Vapor	3
FD	VOCs, BNAs, PCBs, “Michigan 10” Metals, ethylene glycol	Soil	1
		Water	1
VOA Trip Blank***	VOCs	Water	1
Meth Blank	VOCs	Soil	1
FEB***	VOCs, BNAs, PCBs, “Michigan 10” Metals, ethylene glycol	Soil (water jars)	1
FB***	VOCs, BNAs, PCBs, “Michigan 10” Metals, ethylene glycol	Water	1
MS/MSD**	VOCs, BNAs, PCBs, “Michigan 10” Metals, ethylene glycol	Soil	1
		Water	1

* At least one soil sample will be collected from each boring; however, additional samples may be collected based upon field observations, OVM/PID readings, soil lithology, and if groundwater is encountered.

** Additional sample volume will be collected for Matrix Spike/Matrix Spike Duplicate.

*** Submit sample using distilled water.

NOTE: One VOA trip blank will be submitted in each shipping container that contains samples for volatile analysis. One methanol blank will be submitted per day of field activity. FB – Field Blank

FD – Field Duplicate

FEB – Field Equipment Blank

MS/MSD – Matrix Spike/Matrix Spike Duplicate

Field duplicate (FD) samples will be collected from soil and groundwater samples obtained during the subsurface investigation. Remaining Quality Assurance/Quality Control (QA/QC) samples (i.e., field equipment blanks, matrix spike, matrix spike duplicate, methanol blanks and/or trip blanks) will still be collected as outlined in the QAPP.

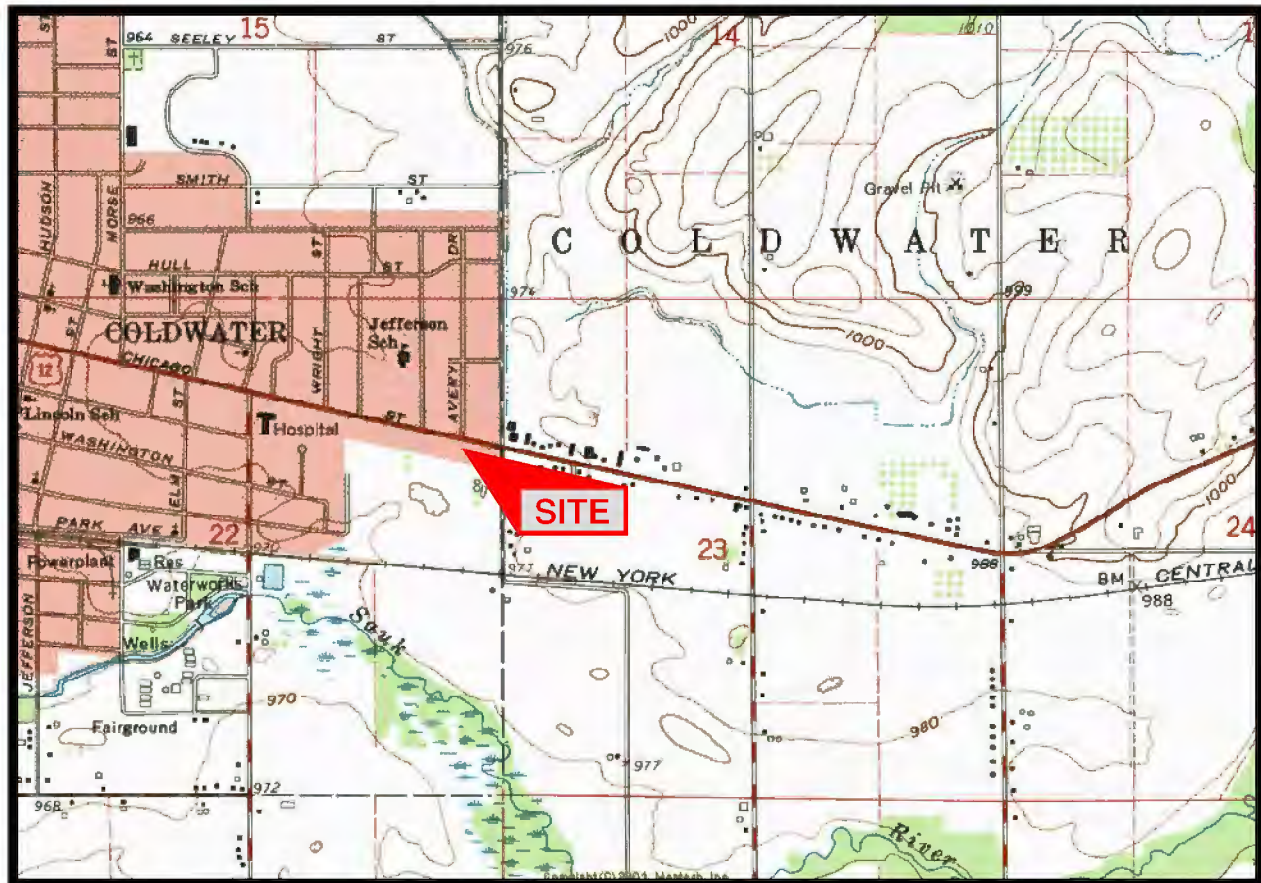
4.0 SCHEDULE

AKT Peerless intends to conduct Phase II ESA sampling activities within two weeks of receipt of authorization to conduct the Phase II ESA.

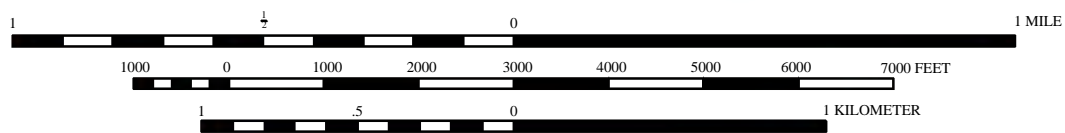
FIGURES

COLDWATER EAST QUADRANGLE

MICHIGAN - BRANCH COUNTY
7.5 MINUTE SERIES (TOPOGRAPHIC)



T.6 S.-R.6 W.



CONTOUR INTERVAL 10 FEET
DATUM IS MEAN SEA LEVEL

IMAGE TAKEN FROM 1960 U.S.G.S. TOPOGRAPHIC MAP



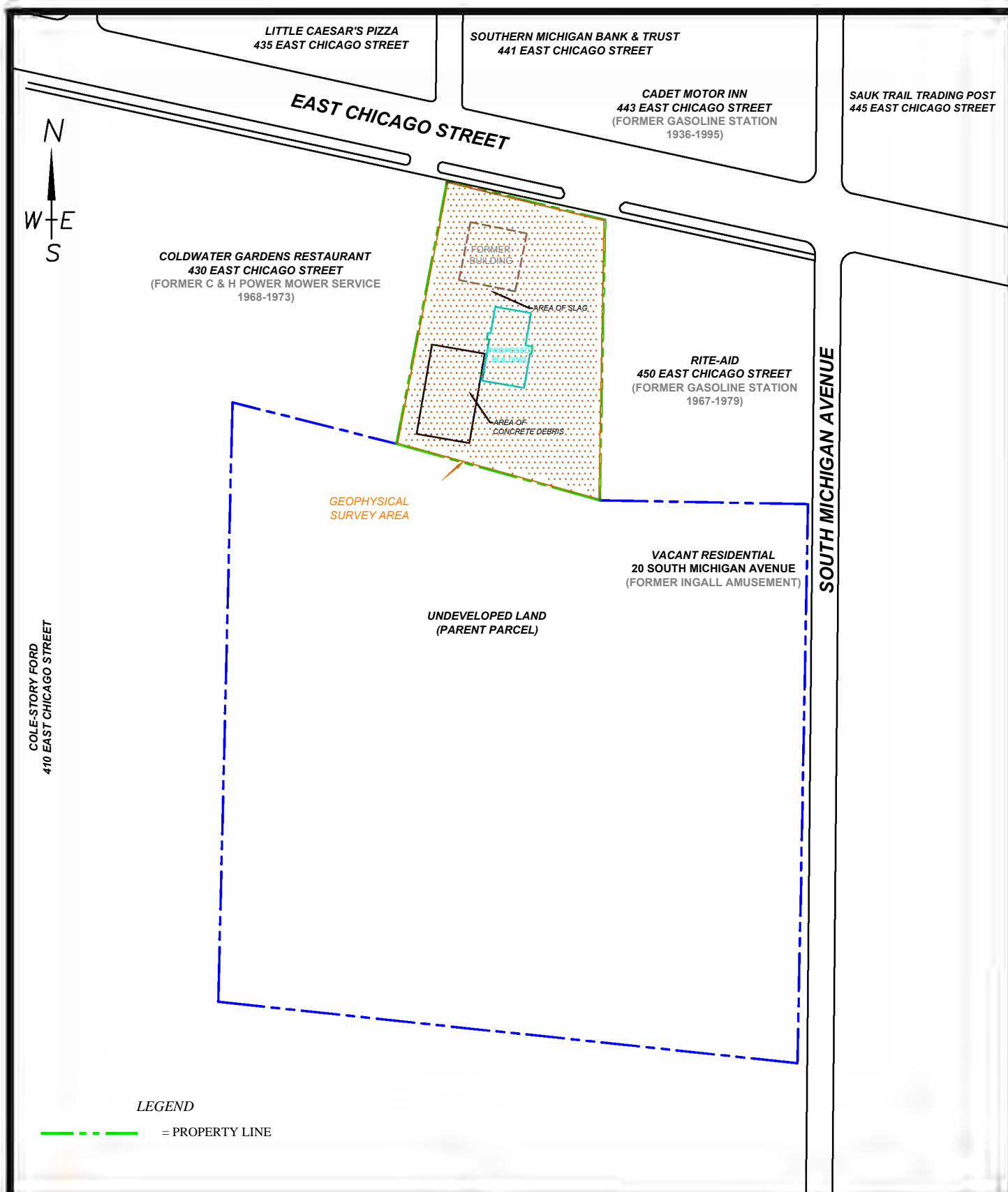
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CHICAGO DETROIT FARMINGTON LANSING SAGINAW
www.aktpeerless.com

TOPOGRAPHIC LOCATION MAP

436 EAST CHICAGO STREET
COLDWATER, MICHIGAN
PROJECT NUMBER : 7169s-2-20

DRAWN BY: OGO
DATE: 08-08-11

FIGURE 1



AKTPEERLESS
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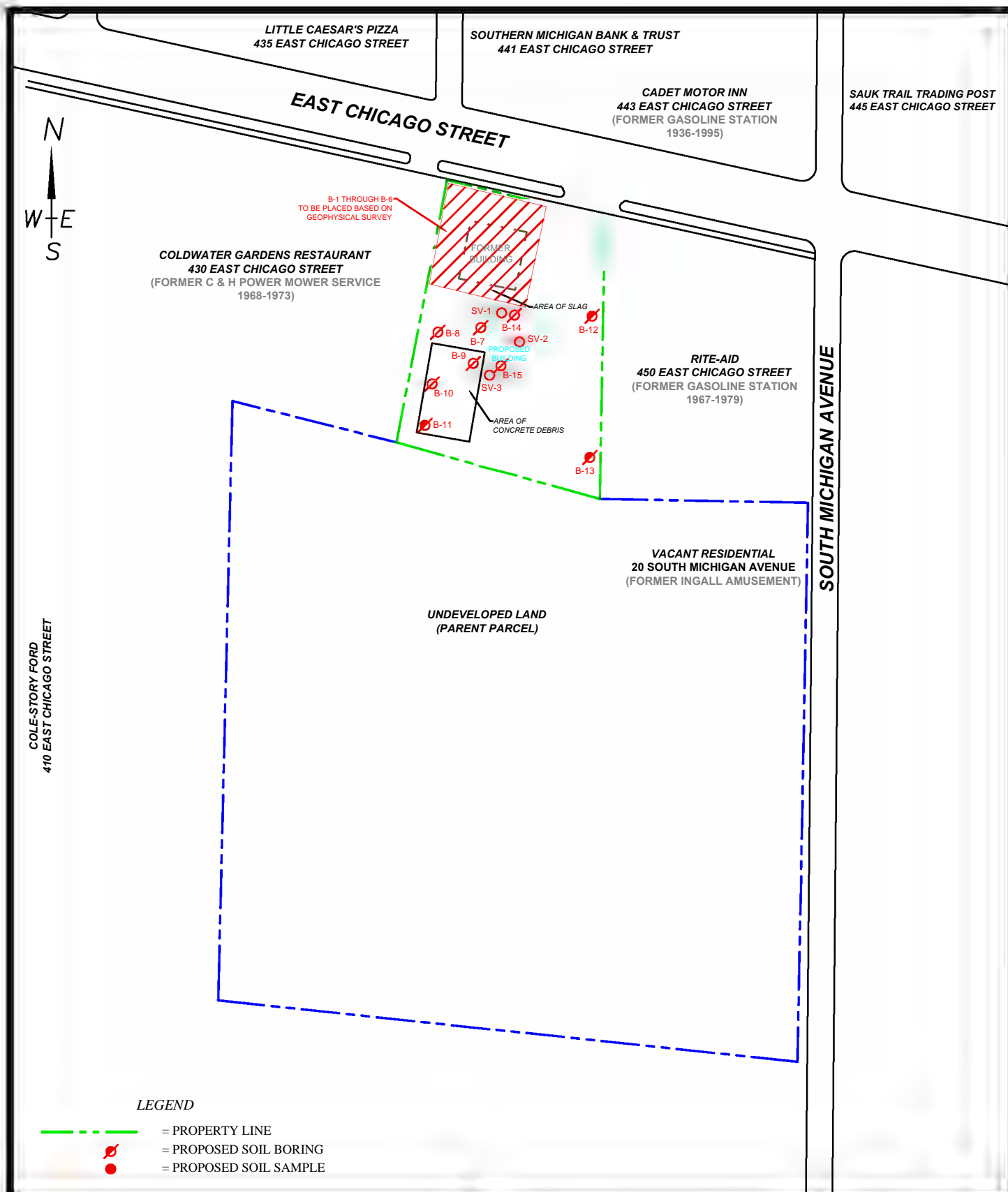
**PROPOSED GEOPHYSICAL SURVEY
MAP**

436 EAST CHICAGO STREET
COLDWATER, MICHIGAN
PROJECT NUMBER : 7169s-2-20

DRAWN BY: OGO
DATE: 08-08-11

0 75 150
SCALE: 1" = 150' ±0

FIGURE 3



DRAWN BY: OGO
DATE: 08-08-11

0 75 150
SCALE: 1" = 150' ±0

FIGURE 4



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APPENDIX A

Site-Specific Health and Safety Plan

AKT Peerless Environmental and Energy Services

REFERENCE: AKT Peerless Health and Safety Plan for Environmental Subsurface Investigation and Remedial Action Projects, Version Number 1.0, March 2005

EMERGENCY TELEPHONE NUMBERS

Ambulance: 911

Poison Control Center: (313) 745-5711

Police: 911

Fire: 911

EMERGENCY EQUIPMENT:

Communication Equipment:

- Mobile telephones located in the field vehicle.

Medical Equipment:

- First aid kits are located in field vehicles
- Eye wash solutions are located in field vehicles

HAND SIGNALS

SIGNAL	INTERPRETATION
Hand gripping throat	Out of air, can't breath
Grip partner's wrist or both hands around waist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	OK, I'm all right, I understand
Thumbs down	No, negative

EMERGENCY ROUTES

Location: Community Health Center of Branch County, 274 East Chicago Street, Coldwater, Michigan 49036

Telephone Number: 517.279.5400 (general information)

Directions to Hospital

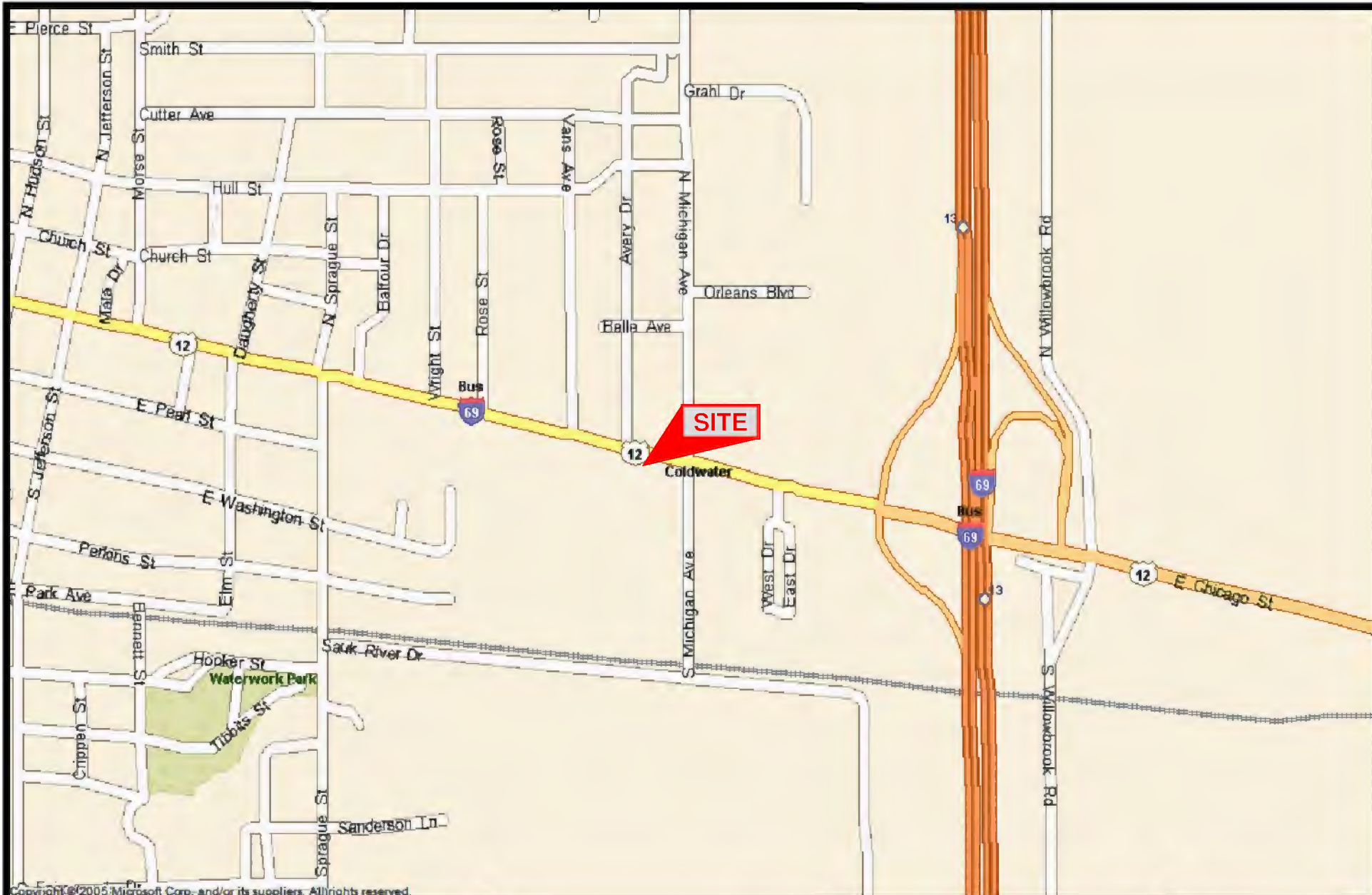
See Attached Maps and Turn by Turn Directions (Figure 2)

ATTACHMENT 1
Personal Acknowledgment Signature Form

We, the undersigned, have individually read and will follow the health and safety guidelines presented in this site-specific Health and Safety Plan and will follow them while performing on-site work activities at

[illegible]

FIGURES



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SUBJECT PROPERTY LOCATION MAP

436 EAST CHICAGO STREET
 COLDWATER, MICHIGAN
 PROJECT NUMBER : 7169s-2-20

LEGEND



DRAWN BY: OGO
 DATE: 08-08-11

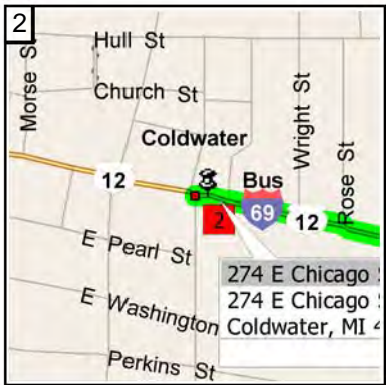
FIGURE 1

436 E Chicago St, Coldwater, MI 49036 to 274 E Chicago St, Coldwater, MI 49036

765 yards; Less than 1 minute



9:00 AM 0.0 mi
Depart 436 E Chicago St,
Coldwater, MI 49036 on I-69
Bus [US-12] (West) for 0.4 mi



9:00 AM 0.4 mi
Arrive 274 E Chicago St,
Coldwater, MI 49036 [274 E
Chicago St, Coldwater, MI
49036]